

10/534384
JC06 Rec'd PCT/PTO 04 MAY 2005
PATENTS
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Division - United States
International Preliminary
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Dyan Gray

Intern'l Appln. No.: PCT/US03/35187

Intern'l Filing Date: 05 November 2003

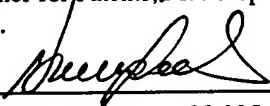
Title: Decorative Composite Materials and Functional
Elements Constructed Therefrom

Attorney Docket: DDG-001

INTERNATIONAL
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Authorized Officer:
Michael J. Freely

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David S. Jacobson, Reg. No. 39,235

10/22/04
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Honorable Commissioner for Patents
Mail Stop PCT
Alexandria, VA 22313

ATTN: IPEA/US

Sir:

This is a timely reply to a Written Opinion dated 8 September 2004.

BEST AVAILABLE COPY

STATEMENT OF THE CLAIMS

1. (original) A composite material, comprising:

a) an epoxy resin formed from

a base portion comprising (i) a polymer of epichlorohydrin and bisphenol A and
(ii) alkyl glycidal ether, and

a reactor portion comprising (i) aromatic alcohol, (ii) benzoic acid, 2 hydroxy,
(iii) cycloaliphatic diamine, (iv) phenol-nonyl, and (v) polymer of epichlorohydrin and
bisphenol A,

said base portion and said reactor portion provided in a two to one ratio; and

b) decorative elements dispersed within said resin,

wherein said resin is sufficiently transparent such that said decorate elements
dispersed within said resin are visible.

2. (original) A composite material according to claim 1, wherein:

said base portion comprises,

(i) 75-93 wt% polymer of epichlorohydrin and bisphenol A, and

(ii) 7-25 wt% alkyl glycidal ether, and

said reactor portion comprises,

(i) 15-35 wt% aromatic alcohol,

(ii) 3-10 wt% benzoic acid, 2 hydroxy,

(iii) 35-65 wt% cycloaliphatic diamine,

(iv) 4-15 wt% phenol-nonyl, and

(v) 0.5-2 wt% polymer of epichlorohydrin and bisphenol A.

3. (original) A composite material according to claim 2, further comprising:

Perox Violet 3B.

4. (original) A composite material according to claim 2, wherein:

said decorative element includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects.

5. (original) A composite material according to claim 1, wherein:

said decorative element includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects.

6. (original) A composite material according to claim 1, wherein:

said epoxy resin comprises at least a surface layer and an under layer, wherein said decorative element is absent from said surface layer.

7. (original) A composite material according to claim 1, wherein:

said epoxy resin comprises at least two layers, and said decorative element is different in each of said at least two layers.

8. (original) A composite material according to claim 1, wherein:

said material is waterproof and highly resistant to physical or chemical degradation.

9. (original) A composite material according to claim 1, wherein:

said material experiences no shrinkage, contraction, or expansion over time.

10. (original) A composite material according to claim 1, wherein:

said material is resistant to mild mineral acids, alkalis, detergents, solvents, skydrol, hydraulic fluids, lubricating oils, and salts.

11. (original) An article, comprising:

a material comprising an epoxy resin formed from a base portion comprising (i) a polymer of epichlorohydrin and bisphenol A and (ii) alkyl glycidal ether, and a reactor portion comprising (i) aromatic alcohol, (ii) benzoic acid, 2 hydroxy, (iii) cycloaliphatic diamine, (iv) phenol-nonyl, (v) polymer of epichlorohydrin and bisphenol A, said base portion and said reactor portion provided in a two to one ratio, and decorative elements dispersed within said resin,
said resin being sufficiently transparent such that said decorative elements dispersed within said resin are visible,

wherein said article comprising the material is one of,

- i) furniture,
- ii) a surface for work, storage, display, or dividing space;
- iii) kitchenware;
- iv) a tray,
- v) a letter opener,
- vi) a vase,
- vii) a planter,
- vii) a lighting fixture,
- viii) a clock,
- ix) a picture frame,
- x) a coaster, and
- xi) a storage device.

12. (original) An article according to claim 11, wherein:

said material further comprises Perox Violet 3B.

13. (original) An article according to claim 11, wherein:

said epoxy resin comprises at least a surface layer and an under layer, wherein said decorative element is absent from said surface layer.

14. (original) An article according to claim 11, wherein:

said epoxy resin comprises at least two layers, and said decorative element is different in each of said at least two layers.

15. (original) A tile, comprising:

a cured epoxy resin comprised of a base portion of (i) a polymer of epichlorohydrin and bisphenol A and (ii) alkyl glycidal ether, and a reactor portion of (i) aromatic alcohol, (ii) benzoic acid, 2 hydroxy, (iii) cycloaliphatic diamine, (iv) phenol-nonyl, and (v) polymer of epichlorohydrin and bisphenol A, said base portion and said reactor portion provided in a two to one ratio, said resin molded in a form so as to have an upper generally planar surface; and

b) decorative elements dispersed within said resin,

wherein said resin is sufficiently transparent such that said decorate elements dispersed within said resin are visible.

16. (original) A tile according to claim 15, wherein:

said tile is clear.

17. (original) A tile according to claim 16, wherein:

said resin includes Perox Violet 3B.

18. (original) A tile according to claim 15, wherein:

said surface area does not exceed approximately 144 inches square, and said tile has a thickness not exceeding approximately 0.5 inch.

19. (currently amended) A method of manufacturing a composite material, comprising:

a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;

b) allowing the first layer to at least partially cure;

c) adding a plurality of decorative element elements onto the at least partially cured first layer, wherein the decorative ~~element~~elements includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects, and wherein no discrete decorative element covers the entirety of the first layer;

d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and

e) allowing the second layer to cure.

20. (original) A method according to claim 19, wherein:

said allowing the first layer to at least partially cure includes curing for preferably six to twenty four hours.

21. (original) A method according to claim 19, further comprising:

providing decorative elements into the first layer.

22. (original) A method according to claim 19, further comprising:

after the second layer is partially cured, third pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a third layer of the resin over the second layer.

23. (original) A method according to claim 22, further comprising:

providing decorative elements in the third layer.

24. (currently amended) A method according to claim 19, further comprising:

prior to adding the plurality of decorative elements onto the at least partially cured first layer, sanding the first layer.

25. (original) A method according to claim 19, wherein:

the reactor portion comprises,

- (i) aromatic alcohol,
- (ii) benzoic acid, 2 hydroxy,
- (iii) cycloaliphatic diamine,
- (iv) phenol-nonyl,
- (v) polymer of epichlorohydrin and bisphenol A.

26. (original) A method according to claim 25, wherein:

the reactor portion comprises,

- (i) 15-35 wt% aromatic alcohol,
- (ii) 3-10 wt% benzoic acid, 2 hydroxy,
- (iii) 35-65 wt% cycloaliphatic diamine,
- (iv) 4-15 wt% phenol-nonyl,
- (v) 1-2 wt% polymer of epichlorohydrin and bisphenol A.

27. (currently amended) A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;
- b) first providing a plurality of decorative elements into the first layer;
- c) at least partially curing the first layer;
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and
- e) allowing the second layer to cure.

28. (currently amended) A method according to claim 27, wherein:

said providing a plurality of decorative elements includes one of,

- i) mixing the decorative elements into the mixture prior to said pouring, and
- ii) adding the decorative elements to the layer after said pouring.

29. (original) A method according to claim 27, further comprising:

removing the cured resin from the mold.

30. (original) A method according to claim 27, wherein:

the mixture includes a reactor portion comprising,

(i) 15-35 wt% aromatic alcohol,

(ii) 3-10 wt% benzoic acid, 2 hydroxy,

(iii) 35-65 wt% cycloaliphatic diamine,

(iv) 4-15 wt% phenol-nonyl,

(v) 1-2 wt% polymer of epichlorohydrin and bisphenol A,

wherein the base portion and reactor portion are provided in a two to one ratio.

31. (original) A method according to claim 27, further comprising:

second providing a decorative element onto the first layer after at least partially curing the first layer.

32. (new) A method according to claim 19, further comprising:

removing the cured resin from the mold.

33. (new) An epoxy resin composite material, comprising:

a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;

b) a plurality of decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;

c) a second layer of an epoxy resin coupled to said first layer and forming a back surface of said material;

d) a plurality of decorative elements of a second size dispersed within said second layer resin, said second size being smaller than said first size,

wherein said first layer is sufficiently transparent such that said decorative elements in said second layer are visible therethrough.

34. (new) An epoxy resin composite material according to claim 33, wherein:

said decorative elements of said second size are even dispersed throughout said second layer.

35. (new) An epoxy resin composite material according to claim 33, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

36. (new) An epoxy resin composite material, comprising:

a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;

b) a plurality of decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;

c) a second layer of an epoxy resin coupled to said first layer and forming a back surface of said material; and

d) a decorative element evenly dispersed within said second layer resin,

wherein said first layer is sufficiently transparent such that said decorative element in said second layer is visible therethrough.

37. (new) An epoxy resin composite material according to claim 36, wherein:
said second decorative element is evenly dispersed within said second layer.

38. (new) An epoxy resin composite material according to claim 36, wherein:
an intervening epoxy resin layer is provided between said first and second layers.

REMARKS

Claims 1-31 are pending in the application. All claims are indicated to have industrial applicability. Claims 1-18, 22, 23, 25, 26 and 30 are also indicated to have novelty and inventive step under PCT Articles 33(1) and (2).

Claims 19-21, 24 and 27-29 are stated to lack novelty as anticipated by U.S. Pat. No. 5,619,814 to Herrndobler. The applicant respectfully traverses this statement for the following reasons.

Claim 19 has been amended to clarify that more than one decorative element is provided onto the first epoxy layer, and that no discrete decorative element is the size of the first layer. In distinction, Herrndobler teaches a photograph holder for a single photograph 14, wherein such photograph is the size of the first layer. See Figs. 2, 3 and 6. There is no teaching or suggestion regarding the addition of any additional photograph or any other decorative element, and certainly no teaching or suggestion to make the photograph smaller than the epoxy layer. Such would have an adverse effect on the decorative design of Herrndobler, as the article is intended to display a single photograph in the entirety of the space defined by the cavity 21.

Claim 21 requires providing decorative elements into the first layer, as well as onto the first layer. Herrndobler teaches only providing a photograph on the first layer, which serves as a tacky layer to hold the photograph in place. (col. 5, lines 25-30) That is, the first layer is used like a glue, and the photograph is not placed within the first

layer. No decorative element is placed into the first layer of epoxy in Herrndobler, and there is no suggestion therefor.

Claim 24 requires that the first layer is sanded prior to adding the decorative element. As discussed in the specification, at page 8, lines 24-26, such sanding is necessary before applying the second epoxy layer when the first layer completely cures. In distinction, Herrndobler teaches sanding the edges and concave center portion of a colorable insert 20. This insert 20 is not epoxy layers 22 or 23, but rather the mold. In fact, Herrndobler teaches away from allowing the first layer to completely cure (which would require such sanding), as “photograph 14 is placed upon the first layer of transparent epoxy while the epoxy is in a tacky state. The first layer of epoxy thereby serving as adhesion means to fixedly mount and secure a photograph 14 within the center concave indentation 21.” (col. 5, lines 25-30) Therefore, Herrndobler fails to teach or suggest the limitation of claim 19.

Claim 27, like amended claim 19 also requires providing a plurality of decorative elements into a first layer of the epoxy. For the reasons advanced above with respect to claim 19, claim 27 is not taught or suggested by Herrndobler.

In addition, claim 29 requires “removing the cured resin from the mold.” The Authorized Officer states that this is taught by Herrndobler at col. 6, line 59. However, such portion of Herrndobler relates only to removal of a dam for the epoxy, not the cured epoxy from a mold. In fact, Herrndobler is forming the epoxy in a gold club head which

is intended for permanent display and there is no teaching to remove the epoxy from the club head. To do so would be to destroy the invention of Herrndobler. Therefore, removing the epoxy from the mold is not taught by Herrndobler.

Claims 19-21 and 27-29 stand rejected as lacking novelty under PCT article 33(2) as anticipated by U.S. Pat. No. 6,357,103 to Sikorski. The applicant respectfully traverses this statement for the following reasons.

First, as discussed above, claim 19 requires more than one decorative element be provided onto the first epoxy layer, and that no discrete decorative element be the size of the first layer. Sikorski teaches a simulated stained glass polymeric film between two layers of epoxy. Sikorski, like Herrndobler, fails to teach or suggest using more than one decorative element or have the provided film extend less than across the entire layer of the epoxy. To implement either of these modifications would limit Sikorski's invention from simulating stained glass, as intended.

Second, claim 19 require that the epoxy be poured into a mold. In Sikorski, there is no mold. "[T]he mixture is applied to surface 11 of glass pane and leveled by tilting the frame back-and-forth until the entire surface 11 is covered." The mixture is unconstrained to flow into gaps. (Col. 4, lines 20-24)

Third, Sikorski provides no indication that the first layer is allowed to at least partially cure prior to added the decorative elements, as required by part b).

For the forgoing reasons, claim 19 is not anticipated nor rendered obvious in view of Sikorski.

Claim 20 requires allowing the first layer to cure for “preferably six to twenty four hours”. There is no teaching in Sikorski regarding any curing for the claimed time period.

Claim 27 requires providing a plurality of decorative elements into the first layer of resin, at least partially curing the first layer, and then adding a second layer of resin over the first layer. As discussed above, Sikorski fails to teach or suggest (i) utilizing a plurality of decorative element and allowing the first layer to cure prior to adding the second layer. Therefore, claim 27 is not anticipated or obvious in view of Sikorski.

Claim 29 requires removing the cured resin from the mold. In Sikorski, the simulated stain glass is formed within a frame and the final article is a “framed picture.” (col. 3, lines 41-43) There is no teaching or suggestion or any incentive to remove the resin from the frame after curing. Contrary to the Authorized Officer’s statement, col. 4, lines 7-36 provide no such teaching.

Claim 31 is stated to lack inventive step under PCT Article 33(3) as obvious over Herrndobler or Sikorski. The Authorized Officer states that while neither reference teaches a second decorative element onto the first layer, “such a duplication of parts

would have been within the ordinary skill of the artisan at the time of the invention.” As discussed above, each of the references teaches a final product that is fully realized with only a single decorative element: (i) a single photograph in Herrndobler which fills the entirety of the mold, and (ii) a single printed polyester film corresponding to a stained glass pattern in Sikorski. A duplication of parts in the respective inventions of the cited references would result in a messy project and detract from the intended results: (i) a photograph holder in which the photograph is permanently mounted behind a resin (Herrndobler), and (ii) a simulated stained glass (Sikorski). Therefore, such a modification would not be obvious.

Claims 32-38 have been added to more completely claim the invention. Claim 32 is allowable for the reasons advanced above with respect to claim 29. Support for claims 33-38 is found at page 8, last paragraph – page 9, second paragraph. More particularly, it is recognized that sand, powder and gravel are smaller in size than stones and rock. In addition, mixing the decorative element into the resin prior to pouring will evenly disperse the element within the resulting resin layer.

In light of all of the above, it is submitted that all of the claims should be indicated novel and possessing an inventive step, and the Applicant hereby requests that

the Authorized Officer provide another Written Opinion indicating the same. Enclosed are replacement pages for pages 16-18, which are now renumbered pages 16-20.

Respectfully submitted,



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October 22, 2004

19. A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;
- b) allowing the first layer to at least partially cure;
- c) adding a plurality of decorative elements onto the at least partially cured first layer, wherein the decorative elements includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects, and wherein no discrete decorative element covers the entirety of the first layer;
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and
- e) allowing the second layer to cure.

20. A method according to claim 19, wherein:

said allowing the first layer to at least partially cure includes curing for preferably six to twenty four hours.

21. A method according to claim 19, further comprising:

providing decorative elements into the first layer.

22. A method according to claim 19, further comprising:

after the second layer is partially cured, third pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a third layer of the resin over the second layer.

23. A method according to claim 22, further comprising:

providing decorative elements in the third layer.

24. A method according to claim 19, further comprising:

prior to adding the plurality of decorative elements onto the at least partially cured first layer, sanding the first layer.

25. A method according to claim 19, wherein:

the reactor portion comprises,

(i) aromatic alcohol,

(ii) benzoic acid, 2 hydroxy,

(iii) cycloaliphatic diamine,

(iv) phenol-nonyl,

(v) polymer of epichlorohydrin and bisphenol A.

26. A method according to claim 25, wherein:

the reactor portion comprises,

(i) 15-35 wt% aromatic alcohol,

(ii) 3-10 wt% benzoic acid, 2 hydroxy,

(iii) 35-65 wt% cycloaliphatic diamine,

(iv) 4-15 wt% phenol-nonyl,

(v) 1-2 wt% polymer of epichlorohydrin and bisphenol A.

27. A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;**
- b) first providing a plurality of decorative elements into the first layer;**
- c) at least partially curing the first layer;**
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and**
- e) allowing the second layer to cure.**

28. A method according to claim 27, wherein:

said providing a plurality of decorative elements includes one of,

- i) mixing the decorative elements into the mixture prior to said pouring, and**
- ii) adding the decorative elements to the layer after said pouring.**

29. A method according to claim 27, further comprising:

removing the cured resin from the mold.

30. A method according to claim 27, wherein:

the mixture includes a reactor portion comprising,

- (i) 15-35 wt% aromatic alcohol,**
- (ii) 3-10 wt% benzoic acid, 2 hydroxy,**
- (iii) 35-65 wt% cycloaliphatic diamine,**
- (iv) 4-15 wt% phenol-nonyl,**
- (v) 1-2 wt% polymer of epichlorohydrin and bisphenol A,**

wherein the base portion and reactor portion are provided in a two to one ratio.

31. A method according to claim 27, further comprising:

second providing a decorative element onto the first layer after at least partially curing the first layer.

32. A method according to claim 19, further comprising:

removing the cured resin from the mold.

33. An epoxy resin composite material, comprising:

- a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;
- b) a plurality of decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;
- c) a second layer of an epoxy resin coupled to said first layer and forming a back surface of said material;
- d) a plurality of decorative elements of a second size dispersed within said second layer resin, said second size being smaller than said first size,

wherein said first layer is sufficiently transparent such that said decorative elements in said second layer are visible therethrough.

34. An epoxy resin composite material according to claim 33, wherein:

said decorative elements of said second size are even dispersed throughout said second layer.

35. An epoxy resin composite material according to claim 33, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

36. An epoxy resin composite material, comprising:

- a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;
- b) a plurality of first decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;
- c) a second layer of an epoxy resin coupled to said first layer and forming a back surface of said material; and
- d) a second decorative element mixed within said second layer resin,

wherein said first layer is sufficiently transparent such that said decorative element in said second layer is visible therethrough.

37. An epoxy resin composite material according to claim 36, wherein:

said second decorative element is evenly dispersed within said second layer.

38. An epoxy resin composite material according to claim 36, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Dyan Gray

Intern'l Appln. No.: PCT/US03/35187

Intern'l Filing Date: 05 November 2003

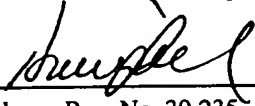
Title: Decorative Composite Materials and Functional
Elements Constructed Therefrom

Attorney Docket: DDG-001

INTERNATIONAL
PRELIMINARY
EXAMINING AUTHORITY

Authorized Officer:
Michael J. Freely

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D.C. 20231.


David S. Jacobson, Reg. No. 39,235

10/25/04
Date

Honorable Commissioner for Patents
Mail Stop PCT
Alexandria, VA 22313

ATTN: IPEA/US

Sir:

SUPPLEMENTAL AMENDMENT AND REMARKS

This is a timely supplemental reply to a Written Opinion dated 8 September 2004. A prior
reply was previously submitted by first class mail on October 22, 2004.

STATEMENT OF THE CLAIMS

1. (original) A composite material, comprising:

a) an epoxy resin formed from

a base portion comprising (i) a polymer of epichlorohydrin and bisphenol A and (ii) alkyl glycidal ether, and

a reactor portion comprising (i) aromatic alcohol, (ii) benzoic acid, 2 hydroxy, (iii) cycloaliphatic diamine, (iv) phenol-nonyl, and (v) polymer of epichlorohydrin and bisphenol A,

said base portion and said reactor portion provided in a two to one ratio; and

b) decorative elements dispersed within said resin,

wherein said resin is sufficiently transparent such that said decorative elements dispersed within said resin are visible.

2. (original) A composite material according to claim 1, wherein:

said base portion comprises,

(i) 75-93 wt% polymer of epichlorohydrin and bisphenol A, and

(ii) 7-25 wt% alkyl glycidal ether, and

said reactor portion comprises,

(i) 15-35 wt% aromatic alcohol,

(ii) 3-10 wt% benzoic acid, 2 hydroxy,

(iii) 35-65 wt% cycloaliphatic diamine,

(iv) 4-15 wt% phenol-nonyl, and

(v) 0.5-2 wt% polymer of epichlorohydrin and bisphenol A.

3. (original) A composite material according to claim 2, further comprising:

Perox Violet 3B.

4. (original) A composite material according to claim 2, wherein:

said decorative element includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects.

5. (original) A composite material according to claim 1, wherein:

said decorative element includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects.

6. (original) A composite material according to claim 1, wherein:

said epoxy resin comprises at least a surface layer and an under layer, wherein said decorative element is absent from said surface layer.

7. (original) A composite material according to claim 1, wherein:

said epoxy resin comprises at least two layers, and said decorative element is different in each of said at least two layers.

8. (original) A composite material according to claim 1, wherein:

said material is waterproof and highly resistant to physical or chemical degradation.

9. (original) A composite material according to claim 1, wherein:

said material experiences no shrinkage, contraction, or expansion over time.

10. (original) A composite material according to claim 1, wherein:

said material is resistant to mild mineral acids, alkalis, detergents, solvents, skydrol, hydraulic fluids, lubricating oils, and salts.

11. (original) An article, comprising:

a material comprising an epoxy resin formed from a base portion comprising (i) a polymer of epichlorohydrin and bisphenol A and (ii) alkyl glycidal ether, and a reactor portion comprising (i) aromatic alcohol, (ii) benzoic acid, 2 hydroxy, (iii) cycloaliphatic diamine, (iv) phenol-nonyl, (v) polymer of epichlorohydrin and bisphenol A, said base portion and said reactor portion provided in a two to one ratio, and decorative elements dispersed within said resin, said resin being sufficiently transparent such that said decorative elements dispersed within said resin are visible,

wherein said article comprising the material is one of,

i) furniture,

ii) a surface for work, storage, display, or dividing space;

iii) kitchenware;

iv) a tray,

v) a letter opener,

vi) a vase,

vii) a planter,

viii) a lighting fixture,

ix) a clock,

x) a picture frame,

xi) a coaster, and

xii) a storage device.

12. (original) An article according to claim 11, wherein:

said material further comprises Perox Violet 3B.

13. (original) An article according to claim 11, wherein:

said epoxy resin comprises at least a surface layer and an under layer, wherein
said decorative element is absent from said surface layer.

14. (original) An article according to claim 11, wherein:

said epoxy resin comprises at least two layers, and said decorative element is
different in each of said at least two layers.

15. (original) A tile, comprising:

a cured epoxy resin comprised of a base portion of (i) a polymer of epichlorohydrin and bisphenol A and (ii) alkyl glycidal ether, and a reactor portion of (i) aromatic alcohol, (ii) benzoic acid, 2 hydroxy, (iii) cycloaliphatic diamine, (iv) phenol-nonyl, and (v) polymer of epichlorohydrin and bisphenol A, said base portion and said reactor portion provided in a two to one ratio, said resin molded in a form so as to have an upper generally planar surface; and

b) decorative elements dispersed within said resin,

wherein said resin is sufficiently transparent such that said decorative elements dispersed within said resin are visible.

16. (original) A tile according to claim 15, wherein:

said tile is clear.

17. (original) A tile according to claim 16, wherein:

said resin includes Perox Violet 3B.

18. (original) A tile according to claim 15, wherein:

said surface area does not exceed approximately 144 inches square, and said tile has a thickness not exceeding approximately 0.5 inch.

19. (previously presented) A method of manufacturing a composite material, comprising:

a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;

b) allowing the first layer to at least partially cure;

c) adding a plurality of decorative elements onto the at least partially cured first layer, wherein the decorative elements includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects, and wherein no discrete decorative element covers the entirety of the first layer;

d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and

e) allowing the second layer to cure.

20. (original) A method according to claim 19, wherein:

said allowing the first layer to at least partially cure includes curing for preferably six to twenty four hours.

21. (original) A method according to claim 19, further comprising:

providing decorative elements into the first layer.

22. (original) A method according to claim 19, further comprising:

after the second layer is partially cured, third pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a third layer of the resin over the second layer.

23. (original) A method according to claim 22, further comprising:

providing decorative elements in the third layer.

24. (previously presented) A method according to claim 19, further comprising:

prior to adding the plurality of decorative elements onto the at least partially cured first layer, sanding the first layer.

25. (original) A method according to claim 19, wherein:

the reactor portion comprises,

- (i) aromatic alcohol,
- (ii) benzoic acid, 2 hydroxy,
- (iii) cycloaliphatic diamine,
- (iv) phenol-nonyl,
- (v) polymer of epichlorohydrin and bisphenol A.

26. (original) A method according to claim 25, wherein:

the reactor portion comprises,

(i) 15-35 wt% aromatic alcohol,

(ii) 3-10 wt% benzoic acid, 2 hydroxy,

(iii) 35-65 wt% cycloaliphatic diamine,

(iv) 4-15 wt% phenol-nonyl,

(v) 1-2 wt% polymer of epichlorohydrin and bisphenol A.

27. (previously presented) A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;
- b) first providing a plurality of decorative elements into the first layer;
- c) at least partially curing the first layer;
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and
- e) allowing the second layer to cure.

28. (previously presented) A method according to claim 27, wherein:

said providing a plurality of decorative elements includes one of,

- i) mixing the decorative elements into the mixture prior to said pouring, and
- ii) adding the decorative elements to the layer after said pouring.

29. (original) A method according to claim 27, further comprising:

removing the cured resin from the mold.

30. (original) A method according to claim 27, wherein:

the mixture includes a reactor portion comprising,

(i) 15-35 wt% aromatic alcohol,

(ii) 3-10 wt% benzoic acid, 2 hydroxy,

(iii) 35-65 wt% cycloaliphatic diamine,

(iv) 4-15 wt% phenol-nonyl,

(v) 1-2 wt% polymer of epichlorohydrin and bisphenol A,

wherein the base portion and reactor portion are provided in a two to one ratio.

31. (original) A method according to claim 27, further comprising:

second providing a decorative element onto the first layer after at least partially curing the first layer.

32. (previously presented) A method according to claim 19, further comprising:

removing the cured resin from the mold.

33. (currently amended) An epoxy resin composite material, comprising:

a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;

b) a plurality of decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;

c) a second layer of an epoxy resin coupled to said first layer forming a back surface of said material; and

d) a plurality of decorative elements of a second size dispersed within said second layer resin, said second size being smaller than said first size,

wherein said first layer is sufficiently transparent such that said decorative elements in said second layer are visible therethrough.

34. (previously presented) An epoxy resin composite material according to claim 33, wherein:

said decorative elements of said second size are even dispersed throughout said second layer.

35. (previously presented) An epoxy resin composite material according to claim 33, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

36. (previously presented) An epoxy resin composite material, comprising:

a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;

b) a plurality of decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;

c) a second layer of an epoxy resin coupled to said first layer forming a back surface of said material; and

d) a decorative element evenly dispersed within said second layer resin,

wherein said first layer is sufficiently transparent such that said decorative element in said second layer is visible therethrough.

37. (previously presented) An epoxy resin composite material according to claim 36, wherein:

said second decorative element is evenly dispersed within said second layer.

38. (previously presented) An epoxy resin composite material according to claim 36, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

39. (new) A method of manufacturing a composite material, comprising:

a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;

b) allowing the first layer to at least partially cure;

c) adding a decorative element onto the at least partially cured first layer, wherein the decorative element includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects;

- d) second pouring mixture of the base portion and the reaction portion of the epoxy resin into the mold to form a second layer of the resin over the first layer;
- e) allowing the second layer to cure; and
- f) removing the cured resin from the mold.

REMARKS

All remarks from the prior reply are incorporated by reference herein.

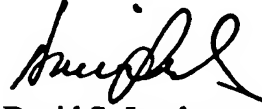
In addition, new claim 39 has been added requiring that the cured resin be removed from the mold. As previously discussed in the prior remarks with respect to claim 29, Herrndobler fails to teach or suggest removing the cured resin from the golf club head as such would destroy the article Herrndobler is teaching to manufacture. In addition, Sikorski fails to teach or suggest removing the cured resin from the between the glass panes with the frame as such would destroy the completed framed picture frame created by Sikorski. Therefore, the cited art fails to teach or suggest the invention of claim 39.

In addition, it is noted that Jap. Pub. No. 62271713A cited in the Specification fails to teach decorative elements of different sizes as claimed in claim 36.

In light of all of the above, it is submitted that all of the claims should be indicated novel and possessing an inventive step, and the Applicant hereby requests that

the Authorized Office provide another Written Opinion indicating the same. Enclosed
are replacement pages 16-21.

Respectfully submitted,



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October 25, 2004

19. A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;
- b) allowing the first layer to at least partially cure;
- c) adding a plurality of decorative elements onto the at least partially cured first layer, wherein the decorative elements includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects, and wherein no discrete decorative element covers the entirety of the first layer;
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and
- e) allowing the second layer to cure.

20. A method according to claim 19, wherein:

said allowing the first layer to at least partially cure includes curing for preferably six to twenty four hours.

21. A method according to claim 19, further comprising:

providing decorative elements into the first layer.

22. A method according to claim 19, further comprising:

after the second layer is partially cured, third pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a third layer of the resin over the second layer.

23. A method according to claim 22, further comprising:

providing decorative elements in the third layer.

24. A method according to claim 19, further comprising:

prior to adding the plurality of decorative elements onto the at least partially cured first layer, sanding the first layer.

25. A method according to claim 19, wherein:

the reactor portion comprises,

- (i) aromatic alcohol,
- (ii) benzoic acid, 2 hydroxy,
- (iii) cycloaliphatic diamine,
- (iv) phenol-nonyl,
- (v) polymer of epichlorohydrin and bisphenol A.

26. A method according to claim 25, wherein:

the reactor portion comprises,

- (i) 15-35 wt% aromatic alcohol,
- (ii) 3-10 wt% benzoic acid, 2 hydroxy,
- (iii) 35-65 wt% cycloaliphatic diamine,
- (iv) 4-15 wt% phenol-nonyl,
- (v) 1-2 wt% polymer of epichlorohydrin and bisphenol A.

27. A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;
- b) first providing a plurality of decorative elements into the first layer;
- c) at least partially curing the first layer;
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer; and
- e) allowing the second layer to cure.

28. A method according to claim 27, wherein:

said providing a plurality of decorative elements includes one of,

- i) mixing the decorative elements into the mixture prior to said pouring, and
- ii) adding the decorative elements to the layer after said pouring.

29. A method according to claim 27, further comprising:

removing the cured resin from the mold.

30. A method according to claim 27, wherein:

the mixture includes a reactor portion comprising,

- (i) 15-35 wt% aromatic alcohol,
- (ii) 3-10 wt% benzoic acid, 2 hydroxy,
- (iii) 35-65 wt% cycloaliphatic diamine,
- (iv) 4-15 wt% phenol-nonyl,
- (v) 1-2 wt% polymer of epichlorohydrin and bisphenol A,

wherein the base portion and reactor portion are provided in a two to one ratio.

31. A method according to claim 27, further comprising:

second providing a decorative element onto the first layer after at least partially curing the first layer.

32. A method according to claim 19, further comprising:

removing the cured resin from the mold.

33. An epoxy resin composite material, comprising:

a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;

b) a plurality of decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;

c) a second layer of an epoxy resin coupled to said first layer and forming a back surface of said material; and

d) a plurality of decorative elements of a second size dispersed within said second layer resin, said second size being smaller than said first size,

wherein said first layer is sufficiently transparent such that said decorative elements in said second layer are visible therethrough.

34. An epoxy resin composite material according to claim 33, wherein:

said decorative elements of said second size are even dispersed throughout said second layer.

35. An epoxy resin composite material according to claim 33, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

36. An epoxy resin composite material, comprising:

a) a first layer of an epoxy resin molded in a form so as to have an upper generally planar front surface with a length and height;

b) a plurality of first decorative elements of a first size dispersed within said first layer resin, each of said decorative elements having a length and height substantially smaller than said first layer;

c) a second layer of an epoxy resin coupled to said first layer and forming a back surface of said material; and

d) a second decorative element mixed within said second layer resin,

wherein said first layer is sufficiently transparent such that said decorative element in said second layer is visible therethrough.

37. An epoxy resin composite material according to claim 36, wherein:

said second decorative element is evenly dispersed within said second layer.

38. An epoxy resin composite material according to claim 36, wherein:

an intervening epoxy resin layer is provided between said first and second layers.

39. A method of manufacturing a composite material, comprising:

- a) first pouring a mixture of a base portion and a reactor portion of an epoxy resin into a mold to form a first layer of the resin;**
- b) allowing the first layer to at least partially cure;**
- c) adding a decorative element onto the at least partially cured first layer, wherein the decorative element includes at least one of stones, pebbles, clay, rock, sand, gravel, dye, pigment, clay, wood, powder, paints, paint chips, pigment, beads, marbles, glass, glow-in-the dark materials, mulch, liquids, photographs, mesh, and figurative objects;**
- d) second pouring a mixture of the base portion and the reactor portion of the epoxy resin into the mold to form a second layer of the resin over the first layer;**
- e) allowing the second layer to cure; and**
- f) removing the cured resin from the mold.**

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